

US009409736B2

(12) United States Patent Iijima et al.

(45) **Date of**

(10) **Patent No.:**

US 9,409,736 B2

(45) **Date of Patent:** Aug. 9, 2016

(54) SHEET CONVEYING DEVICE AND IMAGE RECORDING APPARATUS

(71) Applicant: **BROTHER KOGYO KABUSHIKI KAISHA**, Nagoya-shi, Aichi-ken (JP)

Inventors: Shota Iijima, Nagoya (JP); Masao Mimoto, Nagoya (JP); Takashi Omura,

Inazawa (JP)

(73) Assignee: BROTHER KOGYO KABUSHIKI

KAISHA, Nagoya-Shi, Aichi-Ken (JP)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/861,564

(22) Filed: Sep. 22, 2015

(65) Prior Publication Data

US 2016/0090254 A1 Mar. 31, 2016

(30) Foreign Application Priority Data

Sep. 25, 2014 (JP) 2014-194541

(51)	Int. Cl.	
	B65H 85/00	(2006.01)
	B65H 29/58	(2006.01)
	B65H 5/36	(2006.01)
	B65H 29/52	(2006.01)
	B65H 7/20	(2006.01)
	B65H 5/06	(2006.01)
	B65H 5/26	(2006.01)
	B65H 29/70	(2006.01)

(52) U.S. Cl.

 (2013.01); **B65H 29/58** (2013.01); **B65H 29/70** (2013.01); **B65H 85/00** (2013.01); **B65H** 2404/14 (2013.01)

(58) Field of Classification Search

CPC B65H 85/00; B65H 29/58; B65H 5/36; B65H 5/38

B65H 5/3

See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

8,567,941	B2*	10/2013	Sano B41J 3/4071
8,851,661	B2*	10/2014	347/101 Iijima H04N 1/00578 347/104

FOREIGN PATENT DOCUMENTS

JP 2013-75764 A 4/2013

* cited by examiner

Primary Examiner — Luis A Gonzalez (74) Attorney, Agent, or Firm — Merchant & Gould P.C.

(57) ABSTRACT

A sheet conveying device includes a flap pivoting between a first state to contact a first path-defining member and a second state to be separated from a first path-defining member. The first path-defining member, which faces a second path-defining member in a facing direction, includes a guide surface for guiding a sheet conveyed along a first conveying path, a contact surface positioned farther from the second path-defining member in the facing direction than the guide surface and configured to contact the flap in the first state, and an inclined surface positioned downstream of the contact surface in a conveying direction and inclined such that an upstream end thereof in the conveying direction is closer to the second path-defining member in the facing direction than a downstream end thereof. The upstream end of the inclined surface is closer to the second path-defining member in the facing direction than the contact surface.

18 Claims, 10 Drawing Sheets

